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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/643,406 | 08/19/2003 | Wen Fei Yu | 10541-1850 | 3454 |

29074 7590 11/25/2005

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CHICAGO, IL 60610

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| EXAMINER |
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LEO, LEONARD R

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| ART UNIT | PAPER NUMBER |
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3753

DATE MAILED: 11/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|--------------------------------------|------------------------------------|--|
| Office Action Summary | Application No. 10/643,406 | Applicant(s) YU, WEN FEI | |
| | Examiner Leonard R. Leo | Art Unit 3753 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 August 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The amendment filed on August 31, 2005 has been entered. Claims 1-11 are pending.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-2 and 7-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Modine (1,730,470)(Figure 9), Modine (1,893,521) or Hughes et al (Figures 1-2). Regarding claim 1, the recitation of a “header” does not structurally define over the fins of the respective prior art references. Regarding claims 9-11, the juncture of respective prior art references inherently meets the claim limitations.

Claims 1-2 and 7-11 are rejected under 35 U.S.C. 102(a) as being anticipated by Yoshida et al. Regarding claims 9-11, the juncture of Yoshida et al inherently meets the claim limitations.

Claims 1-2 and 7-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Kobayashi et al (Figure 22). Regarding claims 9-11, the juncture of Kobayashi et al inherently meets the claim limitations.

Claims 1-2 and 7-11 are rejected under 35 U.S.C. 102(e) as being anticipated by Kato et al (Figure 7). Regarding claims 9-11, the juncture of Kato et al inherently meets the claim limitations.

Claims 1-2 and 7-11 are rejected under 35 U.S.C. 102(e) as being anticipated by Gowan et al (Figures 3-4). Regarding claims 9-11, the juncture of Gowan et al inherently meets the claim limitations.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taisuke et al, Kobayashi et al, Ryan et al, Kato et al or Gowan et al.

Yoshida et al, Kobayashi et al, Ryan et al, Kato et al or Gowan et al discloses all the claimed limitations except specific dimensions.

To employ a specific dimension is considered to be an obvious design expedient, producing no new and/or unexpected results and solving no stated problem. It would have been obvious to one of ordinary skill in the art to employ any structural dimension to achieve a desired strength, pressure drop and/or heat exchange.

Response to Arguments

The rejection in view of Ryan et al is withdrawn.

Applicant's arguments have been fully considered but they are not persuasive.

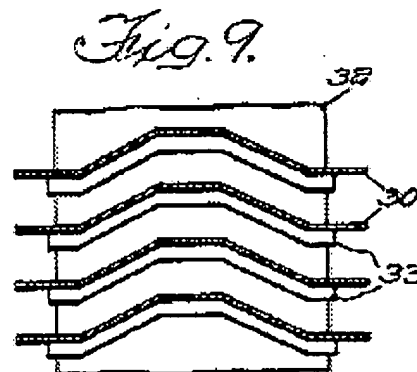
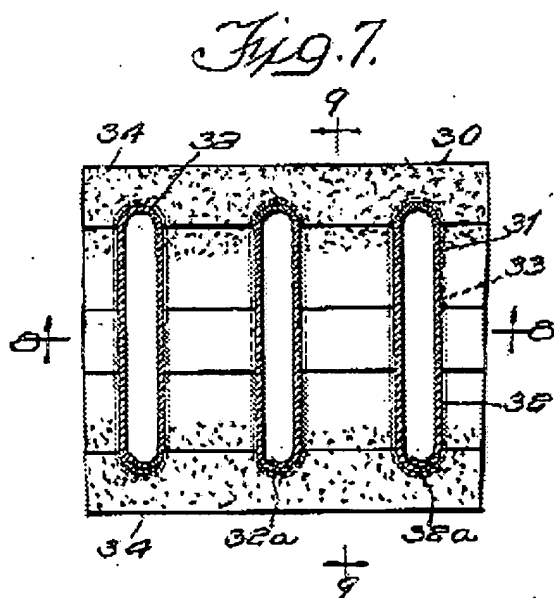
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The anticipatory rejections in view of Modine (1,730,470), Modine (1,893,521) or Hughes et al were incorrectly cited under paragraph (a) of the statute. The references qualify under paragraph (b).

The Japanese document JP 2003-114094 to Taisuke et al is now referenced as Yoshida et al, which is believed to be the first named inventor.

The amended claim limitations are present in each and every prior art reference as follows.

Figure 7 of Modine (1,730,470) discloses a structure having a substantially planar base portion extending laterally (top to bottom) defining a width and longitudinally (left to right) defining a length. Along site line 9-9 of Figure 7, Figure 9 discloses a pair of step portions extending longitudinally along a respective side of the base portion and extending laterally at an angle as a straight segment. The recitation of a "header" does not structurally define over the fins of Modine (1,730,470).



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Figure 3 of Modine (1,893,521) discloses a structure having a substantially planar base portion 26 (center) extending laterally (top to bottom) defining a width and longitudinally (left to right) defining a length. In a side view of Figure 3, Figure 2 discloses a pair of step portions (between planar portions 25 and 26) extending longitudinally along a respective side of the base portion 26 (center) and extending laterally at an angle as a straight segment. The recitation of a "header" does not structurally define over the fins of Modine (1,893,521).

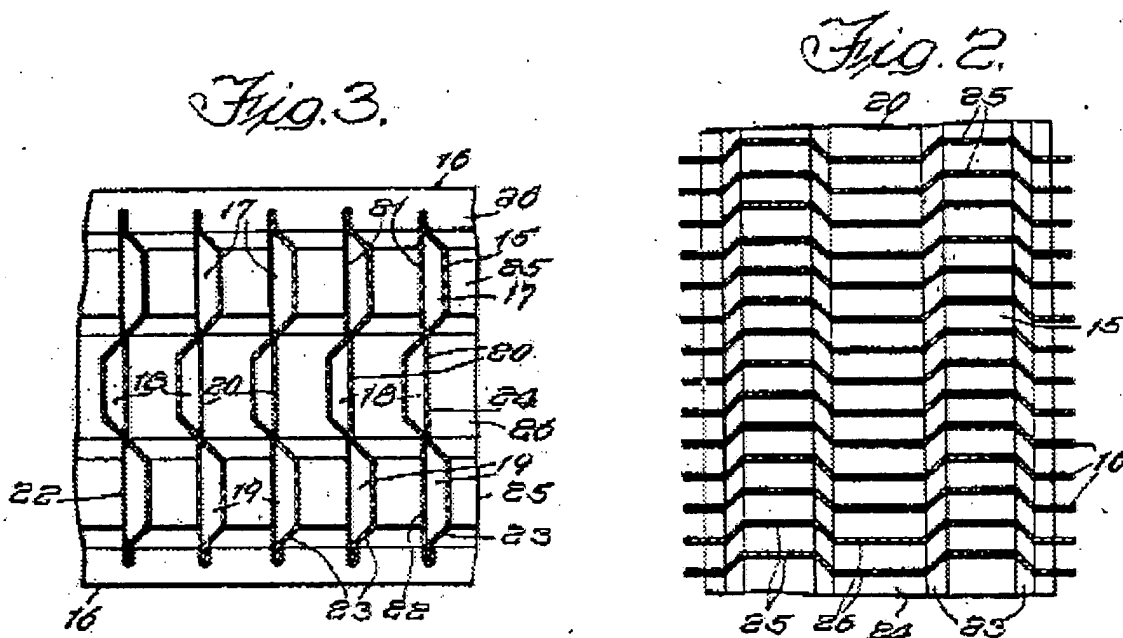


Figure 1 of Hughes et al discloses a structure having a substantially planar base portion extending laterally (left to right) defining a width and longitudinally (top to bottom) defining a length. Along site line 2-2 of Figure 1, Figure 2 discloses a pair of step portions 11 extending longitudinally along a respective side of the base portion and extending laterally at an angle as a straight segment. The recitation of a "header" does not structurally define over the fins of Hughes et al.

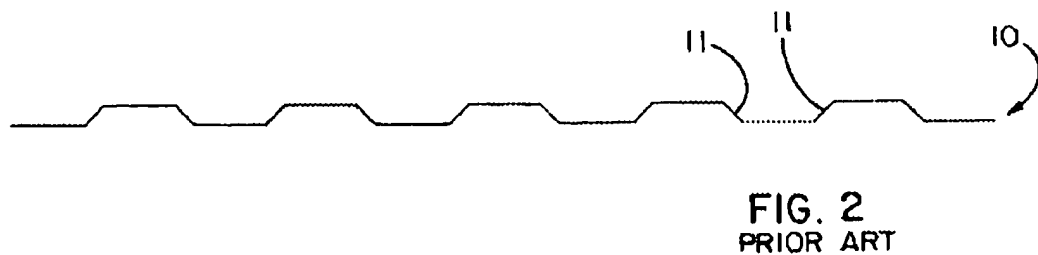
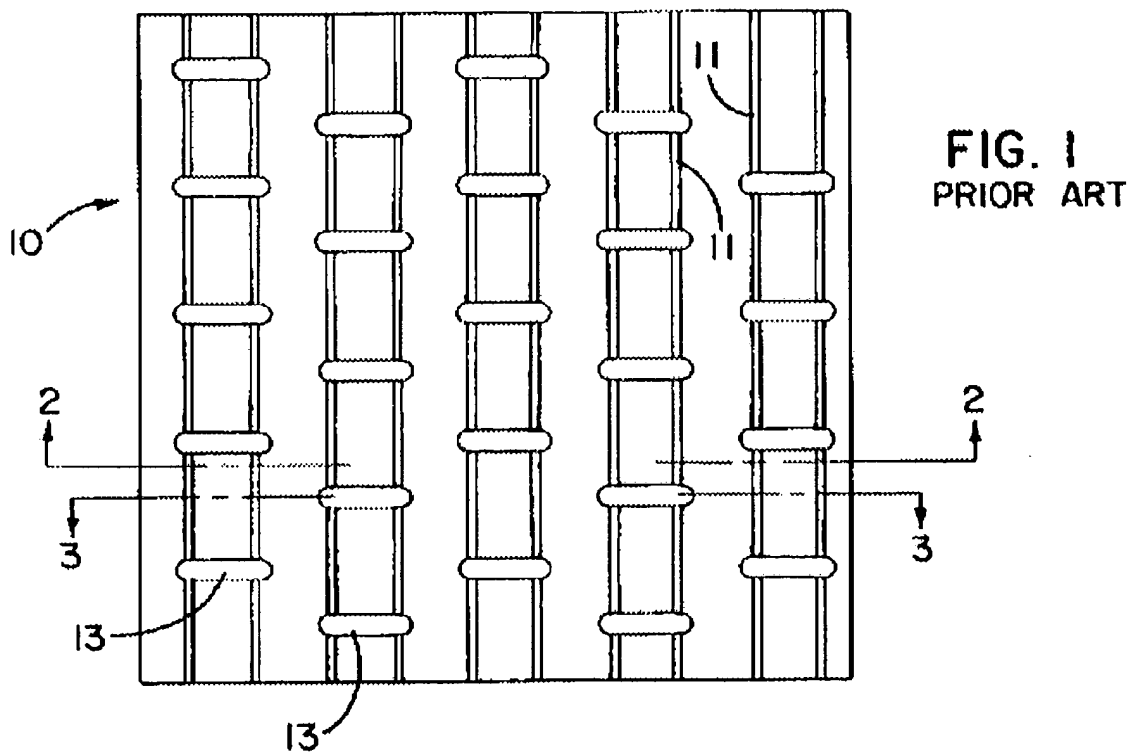


Figure 7a of Yoshida et al discloses a structure having a substantially planar base portion extending laterally (left to right) defining a width and longitudinally (Figure 7b, top to bottom) defining a length. Figure 2 discloses a pair of step portions extending longitudinally along a respective side of the base portion and extending laterally at an angle as a curved segment.

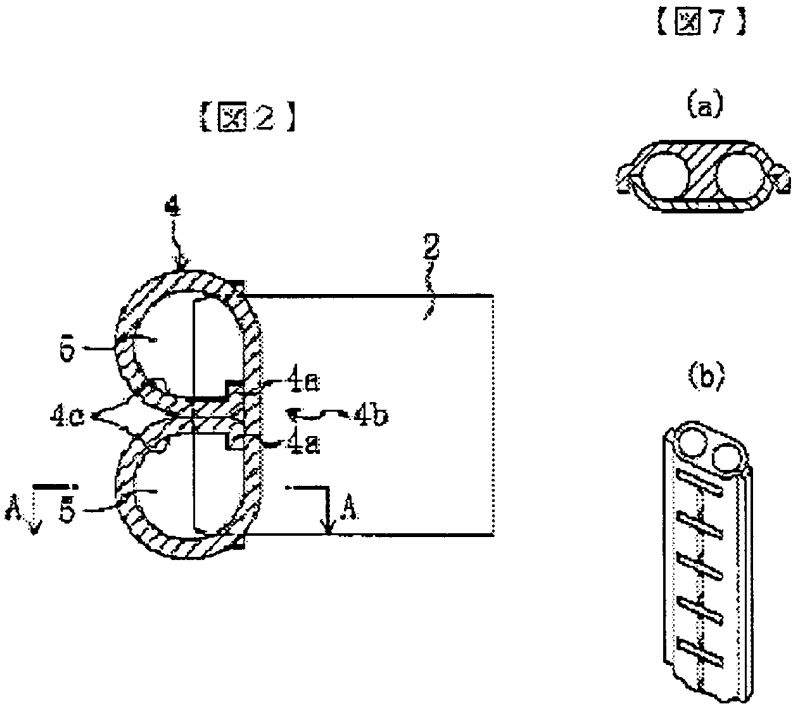


Figure 22 of Kobayashi et al discloses a structure having a substantially planar base portion extending laterally (left to right) defining a width and longitudinally (Figure 23, left to right) defining a length. Figure 22 discloses a pair of step portions extending longitudinally along a respective side of the base portion and extending laterally at an angle as a curved segment.

FIG. 22

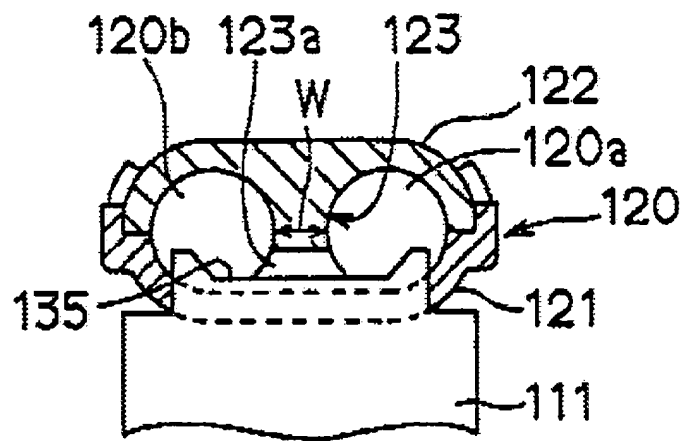


FIG. 23

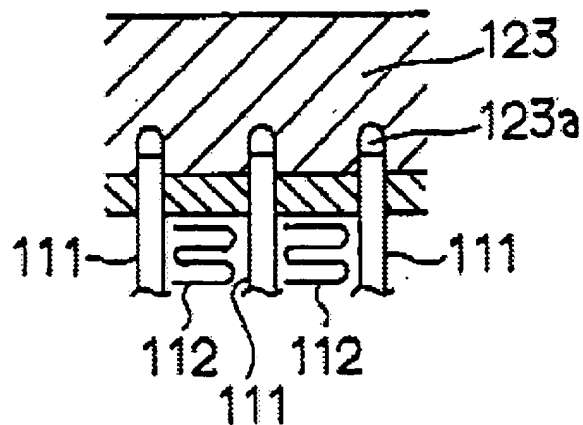


Figure 7 of Kato et al discloses a structure having a substantially planar base portion extending laterally (top to bottom) defining a width and longitudinally (Figure 2, top to bottom) defining a length. Figure 7 discloses a pair of step portions extending longitudinally along a respective side of the base portion and extending laterally at an angle as a curved segment.

FIG. 2

FIG. 7

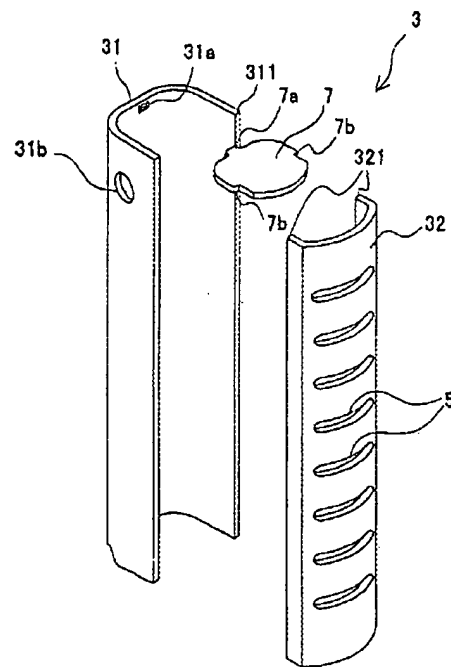
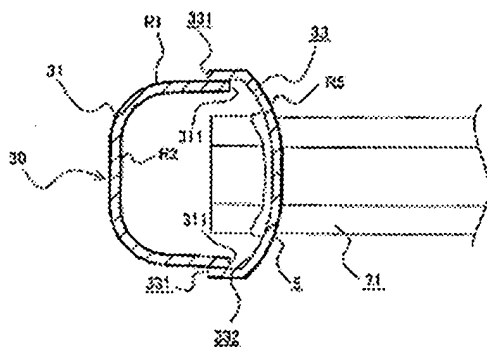


FIG. 1

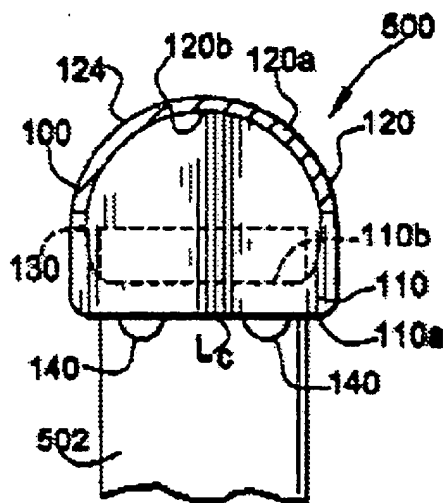


FIG. 3

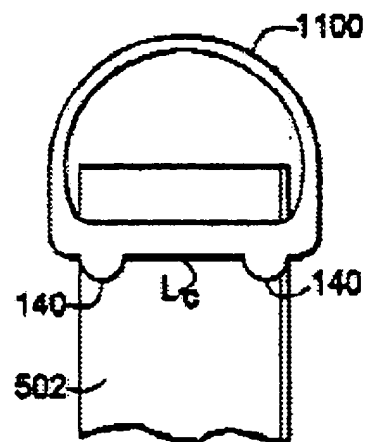


FIG. 4

Lastly, the obviousness rejection is deemed correct for lack of any argument by applicant. Applicant did not traverse the obviousness of employing a specific dimension to achieve a desired strength, pressure drop and/or heat exchange.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

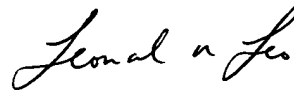
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonard R. Leo whose telephone number is (571) 272-4916. The examiner can normally be reached on Monday thru Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gene Mancene can be reached on (571) 272-4930. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Leonard R. Leo
Primary Examiner
Art Unit 3753

November 22, 2005